

Computer Programming Lab,  
Lab Assignment - Warmup

In this lab assignment, we will implement some classes that are part of a supermarket system. Supermarkets offer dairy products and beverages.

**Exercise -1**

**Packages**

Programmers typically use **packages** to organise classes belonging to the same category or providing similar functionality. Thus for this project, you must organise your work into the following packages:

eg.edu.guc.supermarket

eg.edu.guc.supermarket.products

**Exercise -2**

**DairyProduct Class**

Every supermarket offers some dairy products like Milk, Cheese, Jogurt, etc. In our supermarket project we will represent the dairy products using the `DairyProduct` class obeying the following set of characteristics:

- It should be placed in the `eg.edu.guc.supermarket.products` package.
- Each dairy product should have a name, price, and discount(0%-100%).
- Each dairy product should have a measure of the contained fat. The contained **Fat** of a dairy product is usually classified as **FULLCREAM**, **HALFCREAM**, or **SKIMMED**. This should be represented using Enumeration.
- Appropriate constructors should be implemented, in order to allow creating dairy products while specifying their name, price, discount and fat. Note that the parameters of the constructor should be passed in the previously given order.
- A method `getActualPrice()` should be implemented to get the actual price of the dairy product, i.e. original price - discount amount. ( $DiscountAmount = price \times (discount/100)$ )
- The `String toString()` method should be overridden, to produce a string containing the name, discount, and the actual price of the product. For Example:  
Juhayna Milk, 25%, 7.5
- The `String getAllInfo()` method should be implemented to produce a string representing all information about the product. For example:  
Name: Juhayna Milk  
Price: 10.0 L.E.  
Discount: 25.0 %  
Fat Level: Half-Cream
- You will have to override the method: `public boolean equals(Object o)`, in order to compare two dairy products; i.e. by comparing their instance variables one by one.

### Exercise -3

#### Beverage class

Supermarket offers some beverages like fizzy drinks, juices, etc. In our supermarket project we will represent the beverages using the **Beverage** class obeying the following set of characteristics:

- It should be placed in the `eg.edu.guc.supermarket.products` package.
- Each beverage should have a name, price, and `discount(0%-100%)`.
- Each beverage should have a measure of the contained the sugar level. The `Sugar level` could be `LIGHT`, `ZERO`, `ADDED_SUGAR`, or `NO_ADDED_SUGAR`. This should be implemented through Enumeration.
- Appropriate constructors should be implemented, in order to allow creating beverages while specifying their name, price, discount and sugar level. Note that the parameters of the constructor should be passed in the previously given order. The **Beverage** class has the following methods:
  - A method `getActualPrice()` should be implemented to get the actual price of the beverage, i.e. original price - discount amount.
  - The `String toString()` method should be overridden, to produce a string containing the name, discount, and the actual price of the product.
  - The `String getAllInfo()` method should be implemented to produce a string representing all information about the product.
  - You will have to override the method: `public boolean equals(Object o)`, in order to compare two beverages products; i.e. by comparing their instance variables one by one.